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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,035	03/06/2002	William Vann Hasty JR.	43240	6469

7590 12/29/2003

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EXAMINER

PHAN, MAN U

ART UNIT

PAPER NUMBER

2665

DATE MAILED: 12/29/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/091,035	Hasty et al.
	Examiner Man Phan	Art Unit 2665
		
<i>-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --</i>		
<b>Period for Reply</b>		
A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.		
<ul style="list-style-type: none"> <li>- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.</li> <li>- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.</li> <li>- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.</li> <li>- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).</li> <li>- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).</li> </ul>		
<b>Status</b>		
1) <input checked="" type="checkbox"/> Responsive to communication(s) filed on <u>Mar 6, 2002</u>		
2a) <input type="checkbox"/> This action is FINAL.      2b) <input checked="" type="checkbox"/> This action is non-final.		
3) <input type="checkbox"/> Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11; 453 O.G. 213.		
<b>Disposition of Claims</b>		
4) <input checked="" type="checkbox"/> Claim(s) <u>1-33</u> is/are pending in the application.		
4a) Of the above, claim(s) _____ is/are withdrawn from consideration.		
5) <input type="checkbox"/> Claim(s) _____ is/are allowed.		
6) <input checked="" type="checkbox"/> Claim(s) <u>1-33</u> is/are rejected.		
7) <input type="checkbox"/> Claim(s) _____ is/are objected to.		
8) <input type="checkbox"/> Claims _____ are subject to restriction and/or election requirement.		
<b>Application Papers</b>		
9) <input type="checkbox"/> The specification is objected to by the Examiner.		
10) <input type="checkbox"/> The drawing(s) filed on _____ is/are a) <input type="checkbox"/> accepted or b) <input type="checkbox"/> objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).		
11) <input type="checkbox"/> The proposed drawing correction filed on _____ is: a) <input type="checkbox"/> approved b) <input type="checkbox"/> disapproved by the Examiner. If approved, corrected drawings are required in reply to this Office action.		
12) <input type="checkbox"/> The oath or declaration is objected to by the Examiner.		
<b>Priority under 35 U.S.C. §§ 119 and 120</b>		
13) <input type="checkbox"/> Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).		
a) <input type="checkbox"/> All b) <input type="checkbox"/> Some* c) <input type="checkbox"/> None of: 1. <input type="checkbox"/> Certified copies of the priority documents have been received. 2. <input type="checkbox"/> Certified copies of the priority documents have been received in Application No. _____. 3. <input type="checkbox"/> Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).		
* See the attached detailed Office action for a list of the certified copies not received.		
14) <input type="checkbox"/> Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e). a) <input type="checkbox"/> The translation of the foreign language provisional application has been received.		
15) <input type="checkbox"/> Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.		
<b>Attachment(s)</b>		
1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)		
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)		
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s). <u>2, 4</u>		
4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____		
5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)		
6) <input type="checkbox"/> Other: _____		

## **DETAILED ACTION**

1. The application of Hasty et al. for the "*System and method for using per-packet receive signal strength indication ands transmit power levels to compute path loss for a link for use in layer II routing in a wireless communication network*" filed 03/06/2002 has been examined. Claims 1-33 are pending in the application.

### ***Claim Objections***

2. Claims 1-6, 8-9 and 26 are objected to because of the following informalities:

The claims contain the phrase "adapted to". It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. Claims 6, 17 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Claims provide limitation for operation in accordance with "Standard IEEE-802.11", which makes the claim indefinite because such standard is subject to being changed. With further regard to claims, the reliance on a

commonly known standard such as "IEEE-802.11" as claimed is considered to be an obvious design choice by the artisan.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bringby et al. (US#6,175,745) in view of Haartsen (US#5,491,837).

With respect to claims 1-11, both Bringby et al. (US#6,175,745) and Haartsen (US#5,491,837) disclose a novel system for determining the link quality in wireless communication utilizing RSSI and TPL of the data packet, according to the essential features of the claims. Bringby et al. discloses techniques and structures for determining an appropriate power level for a base station to begin transmitting information to a mobile station on a traffic channel, in which the base station transmit power level setting based upon uplink and downlink pathloss. Measurements made by both the mobile station and the base station are used to improve the pathloss estimate (*link quality indicator*), which in turn provides for a more appropriate power level setting for the base station (Col. 3; lines 12 plus). Bringby further teaches in Fig. 6 a flow chart illustrated an exemplary technique for determining an initial transmit power for a base station, in which at step 600, the mobile station measures a received signal strength (RSSI) associated with a base station transmission. Then, at step 610, it reports the measured signal strength and the power (TPL) at which it is transmitting to the base station. Next, the base station measures the strength at which it is receiving transmissions from the mobile station, at step 620. Then, having all of the information necessary, the system estimates the uplink and downlink pathlosses at step 630. From the pathlosses, an appropriate initial transmit power is determined (step 640) and transmissions to the mobile station on a traffic channel commence (step 650) (Col. 6, lines 10 plus and Col. 7, lines 14 plus).

In the same field of endeavor, Haartsen (US#5,491,837) discloses a method for dynamically allocating channels in a communication system which maximizes system capacity and link quality while minimizing the transmitted power of the mobile

radiotelephones. Haartsen teaches in Figs. 5 & 6 flow charts illustrated the uplink and downlink allocation of channels within a radio communication system, specifically a cellular network which comprising the steps of: (a) measuring, in a mobile station, received signal strength indications (RSSIs) of control signals broadcast from at least one base station; (b) determining a path loss between the mobile station and the at least one base station using the RSSI measurements; © measuring, in the at least one base station, an RSSI of interference signals on a plurality of available traffic channels; (d) determining transmit powers required for the mobile station to produce a signal on each of the plurality of available traffic channels at the at least one base station, wherein a strength of the signal is a predetermined level above a corresponding RSSI interference level measured on a traffic channel taking into consideration the path loss; and (e) assigning one of the plurality of available traffic channels as an uplink channel based on the determined transmit powers (TPL) (Col. 7, lines 5 plus and Col. 19, lines 28 plus).

Regarding claims 12-22, they are method claims corresponding to the apparatus claims 1-11 above. Therefore, claims 12-22 are analyzed and rejected as previously discussed with respect to claims 1-11.

With respect to claims 23-32, These claims differ from claims Bringby et al. in view of Haartsen in that the claims recited a computer program product for performing the same basis of steps and apparatus of the prior arts as discussed in the rejection of claims 1-11 and 12-22 above. It would have been obvious to a person of ordinary skill in the art to implement a computer program product in Bringby et al. in view of Haartsen for performing the steps and apparatus as recited in the claims with the motivation being to

provide the efficient enhancement to the link quality determination in a wireless communication network, and easy to maintenance, upgrade.

One skilled in the art would have recognized the need for effectively and efficiently determining the integrity of a link for use in layer II routing, and would have applied Haartsen's assigning uplink and downlink radio channels utilizing RSSI and TPL into Bringby's novel use of the initial power level setting for the base station . Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Haartsen's method and system for channel allocation using power control and mobile assisted handover measurements into Bringby's initial transmit power determination in a radio communication system with the motivation being to provide a method and system for using per-packet RSSI and TPL to compute path loss for a link for use in layer II routing in a wireless communication network.

### *Conclusion*

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The Tayloe (US#5,697,056) is cited to show the communication system in which radio subscriber units mitigate interference.

The Haartsen et al. (US#6,519,236) is cited to show the automatic power control in uncoordinated frequency hopping radio systems.

The Todd et al. (US#6,035,183) is cited to show the base station RSSI and BER

feedback signal quality display and transmit diversity.

The Grubb et al. (US#5,768,684) is cited to show the method and apparatus for bi-directional power control in a digital communication system.

The Silventoinen et al. (US#6,498,932) is cited to show the method and apparatus for determining the pathloss between a base transceiver station and a mobile station in a mobile radio network.

The Almgren et al. (US#6,137,993) is cited to show the method and apparatus for estimating path loss in a radio communications system.

The Evans et al. (US#6,138,024) is cited to show the dynamic channel selection in a cellular communication system.

The Muller (US#6,498,934) is cited to show the channel allocation using enhanced path loss estimates.

The Umemoto et al. (US#5,960,335) is cited to show the digital radio communication apparatus with a RSSI information measuring function.

The Whitehead (US#6,157,616) is cited to show the adaptive methods for packet transmission over wireless networks.

The Sakoda (US#6,021,125) is cited to show the cellular wireless communications system and base station.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Phan whose telephone number is (703)305-1029. The examiner can normally be reached on Mon - Fri from 6:30 to 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached on (703) 308-6602. The fax phone number for the organization where this application or proceeding is assigned is (703)305-3988.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

**8. Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:** (703) 305-9051, (for formal communications intended for entry)

**Or:** (703) 305-3988 (for informal or draft communications, please label  
"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021

Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Mphan

12/18/2003.

*Muan Phan*